

REMARKS

In response to the Office Action, the applicants offer the following remarks.

The applicants acknowledge with appreciation the Examiner's indication that each rejection based on the references cited in the first Office Action has been withdrawn.

Claims 1-8, 14, 15, 19, 22, and 23 are pending in the present application. Claims 1-8, 14, 15, 19, 22, and 23 stand rejected under 35 U.S.C. § 112, second paragraph as being indefinite. Claims 1-3, 6, 8, 14, and 22 stand rejected under 35 U.S.C. § 102 for anticipation by Vyse (US 4,906,031). Claims 1-8, 14, 19, 22, and 23 stand rejected under 35 U.S.C. § 102 for anticipation by Goss (US 5,639,113). Claim 19 is rejected under 35 U.S.C. § 103 for obviousness in view of Vyse. Claim 15 is rejected under 35 U.S.C. § 103 for obviousness in view of Goss.

Briefly and in summary, the latching system of the present invention provides releasable engagement between two structures. A resilient member, configured as a torroid, is positioned against a surface of one structure. The resilient member has an opening that expands radially outwardly to allow passage of a stud extending outwardly from the other structure when a force is applied parallel to the axis of the stud. The stud comprises an outer surface oriented at an angle to the axis of the stud, which is releasably engaged by relaxation of the resilient member.

In response to the various paragraphs of the Office Action, the applicants offer the following specific remarks.

A. Paragraph 1

Section 112, 2d Para.: The Office Action rejects Each pending claim (1-8, 14, 15, 19, 22, and 23) under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicants regard as their

invention. Specifically, the Examiner correctly points out that in claim 4, it is not clear which “surface” and “structure” is referred to at line 7. Claims 1, 4, 14, 19, 22, and 23 have been amended to more clearly recite applicants’ invention.

B. Paragraphs 3 and 4

Anticipation, Section 102: The Office Action rejects claims 1-3 and 6, 8, 14, and 22 under 35 U.S.C. § 102(b) as being anticipated by United States Patent No. 4,906,031 issued to Vyse. Anticipation requires that each and every limitation of the claim be disclosed, either expressly or under principles of inherency, in a single prior art reference. In re Robertson, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (reversing Board’s anticipation rejection that was based on principles of inherency); MPEP § 2131. Absence from the reference of any claimed limitation negates anticipation. Rowe v. Dror, 42 USPQ2d 1550, 1553 (Fed. Cir. 1997) (preamble claim limitation reciting a balloon angioplasty catheter not anticipated by a general purpose balloon catheter).

Claim 1 as amended recites, as one limitation, “said resilient member being configured ... to releasably engage said outer surface of said stud.” The Vyse reference neither expressly nor under principles of inherency discloses that limitation. Accordingly, the applicants respectfully submit that the Vyse reference does not anticipate claim 1.

In sharp contrast, Vyse teaches away from applicants’ claimed releasable engagement by pointing out that “[t]he socket and the nipple are then, of course, fully and permanently assembled, as shown in Fig. 4.” (Col. 3, lines 40-41).

On page 8, lines 28-31, the applicants make clear that separation of stud 22 from radial spring 50 is merely resisted by friction of the radial spring relaxing in a groove in the stud. Separation, however, can be achieved by application of a manual (axial) force, overcoming the friction.

Vyse does not disclose or suggest releasable engagement. To the contrary, the purpose of Vyse quick connect is exactly the opposite (i.e., to form a permanent connection suitable for holding a vehicle seat in place, for example). In fact, the stated object of Vyse is to avoid disadvantages of prior art that permits a locked connection to be released. (Col. 1. lines 52-55). Modification of Vyse to provide releasable engagement would render the quick connect of Vyse unfit for its intended purpose. Therefore, Vyse explicitly teaches away from this limitation of claim 1.

Claims 2, 3, and 6-8 depend from claim 1, and therefore can not be anticipated by Vyse, since claim 1 is not anticipated by Vyse.

Claims 4, 14, 19, 22, and 23 similarly each recite a limitation of the resilient member releasably engaging the stud or a surface thereof. Accordingly claims 4, 14, 19, 22, and 23, as well as the claims depending therefrom are not anticipated by Vyse for the reason provided above.

C. Paragraph 5

Anticipation, Section 102: The Office Action rejects claims 1-8, 14, 19 22, and 23 under 35 U.S.C. § 102(b) as being anticipated by United States Patent No. 5,639,113 issued to Goss.

As amended, claims 1, 4, 14, 19, 22, and 23 each recites, as one limitation, a torroidal radial spring or torroidal resilient member configured to releasably engage a stud or surface thereof. The Goss reference neither expressly nor under principles of inherency discloses that limitation. Accordingly, the applicants respectfully submit that the Goss reference does not anticipate claim 1.

Goss instead teaches a locking ring 28 which is compressed into an annular groove 30 allowing the locking ring and a coupling pin 12 to pass through a tapered bore and re-expands into a locking groove 19 (i.e., a counterbore) at the end of the bore to permanently lock the pin in place (col. 4 lines 4-38). Goss states that “the contour and shoulder 19a of the locking groove 19 locks the expanded ring therein preventing its recompression

which prevents retraction of the pin 12 from bushing 14 and securely fixes the module 1 onto the mounting bracket 22,22,” (Col. 4, lines 26-30) and that “any attempt to withdraw the pin 12 is resisted.” (Col. 4, line 33) Like Vyse, Goss therefore teaches away from releasably engaging a stud.

D. Paragraphs 6 and 7

Obviousness, Section 103: The Office Action rejects claim 19 under 35 U.S.C. § 103 as unpatentable over United States Patent No. 4,906,031 issued to Vyse. In response to that rejection, the applicants offer the following remarks establishing the nonobviousness of the claimed invention. In view of those remarks, the applicants submit that claim 19 is in condition for allowance.

The applicants contend that claim 19 is not subject to rejection under 35 U.S.C. § 103 because, assuming arguendo that it would be obvious to modify Vyse to include more than one coupling as suggested by the Examiner, the resulting combination, does not suggest at least one limitation of claim 19. Therefore, the proposed modification of Vyse fails to establish prima facia obviousness.

As claimed in claim 19, the latching system for providing releasable engagement of two structures and maintaining a predetermined gap between the structures includes the limitation "each of said studs extending along an axis and having a groove oriented at an angle to said axis and located to maintain a predetermined gap between said structures". Applicants, at page 9 of the specification at lines 9-19, clearly define that the groove location maintains the pre-determined gap between the structures. Nothing in the cited art discloses or suggests that structural aspect of the invention as described and claimed.

E. Paragraph 8

Obviousness, Section 103: The Office Action rejects claim 15 under 35 U.S.C. § 103 as unpatentable over United States Patent No. 5,639,113 issued to Goss. In response to that rejection, the applicants offer the following remarks establishing the nonobviousness of the claimed invention. In view of those remarks, the applicants submit that claim 15 is in condition for allowance.

The applicants contend that claim 15 is not subject to rejection under 35 U.S.C. § 103 because, the modification suggested by the Examiner is not a mere reversal of the essential working parts of the coupling as suggested by the Examiner, but a hindsight reconstruction of the applicants' invention. There is no suggestion or motivation in the prior art to make the suggested modification. Therefore, the proposed modification of Goss fails to establish prima facia obviousness.

As claimed in claim 19, the coupling comprises a stud mounted on a frame and a torroidal radial spring mounted on a door. Goss teaches a pin 12 having a ring 28 mounted on the pin, wherein the pin forces the ring into a counterbore in a bushing 14 to permanently lock the pin in the bushing. Goss does not teach or suggest mounting either the stud or the torroidal radial spring to a frame. Nothing in the cited art discloses or suggests that structural aspect of the invention as described and claimed.

F. Paragraph 9

Allowable Subject Matter: The applicant acknowledges the Examiner's withdrawal of the indicated allowability in the previous Office Action.

G. Newly added Claims

Claims 24 and 25 have been newly added.

Claim 24 has been newly added in response to the Examiner's suggestion in Paragraph 9 of the Office Action. Claim 24 limits the latching

system to an enclosure latching system for releasably engaging a door to a frame, comprising a stud having an angled surface and a coiled spring having an axis arranged in a circle to form a torroidal configuration. The torroidal configuration defines an opening, which is expandable by introduction of the stud therein to allow the stud to pass through the opening, and which relaxes to releasably engage the stud.

Claim 24 is not disclosed or suggested by the cited references because none of the cited references disclose or suggest a coiled spring with its axis formed in a circle to releasably engage an angled surface of a stud. Nor do the cited references disclose or suggest such a latching system for use in latching a door and a frame. These limitations, suggested by the Examiner in Paragraph 9 of the Office action, define patentable subject matter, and claim 24 is therefore allowable.

Claim 25 has been newly added to emphasize that one of the frame and door comprises a constraining surface that constrains the outer surface of the resilient member. Claim 25 is patentable over the cited references because the cited references do not disclose or suggest a resilient member with a torroidal configuration whose outer surface is constrained to prevent expansion and while the opening is expandable to permit passage of a stud, wherein the resilient member releasably engages the stud when the door is closed. To the contrary, Vyse and Goss both teach a resilient member with an outer surface and opening that expand and relax together. The resilient members of Vyse and Goss lock against a stud when the outside surface is constrained.

H. Conclusion

For all of the foregoing reasons, claim 1 is in condition for allowance and would not have been anticipated by or obvious in view of either Vyse or Goss. Because claims 2, 3, and 6-8 depend from a patentable claim, they are also patentable. *See, e.g., In re McCarn*, 101 USPQ 411, 413 (CCPA 1954) (“sound law” requires allowance of dependent claims when their antecedent claims are allowed). Moreover, these claims are nonobvious in view of the applied references.

Claims 4, 5, 14, 15, 22, 23, and newly added claims 24 and 25 similarly are in condition for allowance for the foregoing reasons.

The rejections under 35 U.S.C. §§ 102, 103, and 112 and the objections should all be withdrawn. Favorable action is earnestly solicited. Finally, the Examiner is invited to call the applicants' undersigned representative if any further action will expedite the prosecution of the application or if the Examiner has any suggestions or questions concerning the application or the present Response. In fact, if the claims of the application are not believed to be in full condition for allowance, for any reason, the applicants respectfully request the constructive assistance and suggestions of the Examiner in drafting one or more acceptable claims pursuant to MPEP § 707.07(j) or in making constructive suggestions pursuant to MPEP § 706.03 so that the application can be placed in allowable condition as soon as possible and without the need for further proceedings.

Respectfully submitted,

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Dated: November 21, 2002

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November 21, 2002

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VERSION WITH MARKINGS TO SHOW CHANGES MADEIN THE CLAIMS:

- 1 1. (Once Amended) A system for providing releasable engagement
2 between two structures, said system comprising:
 - 3 a stud extending outwardly from a first one of said structures along an
4 axis, said stud having an outer surface oriented at an angle to said axis; and
 - 5 a resilient member positioned adjacent a surface of [the other] a
6 second one of said structures, said resilient member having a substantially
7 torroidal configuration [, an outer surface contacting said surface of said
8 structure to prevent movement of said outer surface radially outwardly, and
9 an inner surface movable radially outwardly;
 - 10 said torroidal configuration of said resilient member] defining an
11 opening smaller than said stud [, and] ; said [opening of said] resilient
12 member being configured to allow said opening to expand radially outwardly
13 to permit passage of said stud upon application of a force parallel to said axis
14 [, said resilient member being configured] and to releasably engage said outer
15 surface of said stud [for releasable engagement of said stud] when said
16 resilient member is relaxed, thereby providing releasable engagement
17 between said structures.
- 1 4. (Twice Amended) A system for providing releasable engagement
2 between [two] a first structure and a second structure[s], said system
3 comprising:
 - 4 a stud extending outwardly from said first [one of said] structure[s]
5 along an axis, said stud having an outer surface oriented at an angle to said
6 axis; and
 - 7 a resilient member positioned adjacent a surface of [the other one of]
8 said second structure[s], said resilient member having a substantially torroidal
9 configuration, an outer surface contacting said surface of said second

10 structure to prevent movement of said outer surface of said resilient member
11 radially outward, and an inner surface moveable radially outward;

12 said torroidal configuration of said resilient member defining an
13 opening smaller than said stud, and said [opening of said] resilient member
14 being configured to expand radially outwardly at said opening when axial
15 force is applied to said stud to permit passage of said stud, said resilient
16 member being configured to releasably engage said surface of said stud [for
17 releasable engagement of said stud] when said resilient member is relaxed,
18 thereby providing releasable engagement between said structures;

19 wherein one of said structures comprises a door.

1 14. (Twice Amended) A system for providing releasable engagement
2 between two structures and for maintaining a predetermined gap between said
3 structures, said system comprising:

4 a substantially cylindrical stud mounted on one of said structures and
5 extending outwardly therefrom along an axis, said stud having a groove
6 extending about a periphery of said stud at an angle to said axis of said stud;
7 and

8 a torroidal radial spring positioned adjacent a surface of the other one
9 of said structures, said radial spring having an outer surface contacting said
10 surface of said other one of said structures to prevent movement of said outer
11 surface radially outwardly with respect to said axis of said stud, said radial
12 spring also having an inner surface movable radially outwardly with respect
13 to said axis of said stud;

14 said inner surface of said radial spring defining an inner diameter
15 smaller than the maximum diameter of said stud when said radial spring is
16 relaxed, and said inner surface being configured to expand radially outwardly
17 to permit passage of said stud when said radial spring is expanded, said radial
18 spring being configured to releasably engage said groove of said stud [for
19 releasable engagement of said stud] when said radial spring is relaxed,

20 thereby providing releasable engagement between said structures, and thereby
21 maintaining said predetermined gap between said structures.

1 15. (Once Amended) The system as recited in claim 14, one of said
2 structures comprising a frame and the other of said structures comprising a
3 door, said stud being mounted on said frame and said radial spring being
4 [positioned] mounted on said door adjacent a surface of said door.

1 19. (Twice Amended) A system for providing releasable engagement
2 between two structures and for maintaining a predetermined gap between said
3 structures, said system comprising:

4 a plurality of substantially cylindrical studs mounted on one of said
5 structures and extending outwardly therefrom, each of said studs extending
6 along an axis and having a groove oriented at an angle to said axis and
7 located to maintain said predetermined gap between said structures; and

8 a plurality of toroidal radial springs mounted adjacent surfaces of the
9 other one of said structures, each of said radial springs being mounted at a
10 location corresponding to an axis of one of said studs when said structures
11 are adjacent one another, and each of said radial springs having an outer
12 surface contacting a surface of said other one of said structures to prevent
13 movement of said outer surface of said radial spring radially outwardly, and
14 each of said radial springs also having an inner surface movable radially
15 outwardly;

16 said inner surface of each of said radial springs defining an inner
17 diameter smaller than the maximum diameter of said studs when said radial
18 springs are relaxed, and said inner surface of each of said radial springs
19 being configured to expand radially outwardly to permit passage of one of
20 said studs when said radial springs are expanded, each of said radial springs
21 being configured to releasably engage said groove of one of said studs [for
22 releasable engagement of said stud], thereby providing releasable engagement
23 between said structures, and thereby maintaining said predetermined gap
24 between said structures.

1 22. (Once Amended) A latching assembly for providing releasable
2 engagement between two structures, said latching assembly comprising:

3 a stud extending outwardly from one of said structures along an axis,
4 said stud having an outer surface oriented at an angle to said axis; and

5 a resilient member positioned adjacent a surface of the other one of
6 said structures, said resilient member having a substantially toroidal
7 configuration, an outer surface contacting said surface of said other one of
8 said structures to prevent movement of said outer surface of said resilient
9 member radially outward, and an inner surface defining an opening and
10 moveable radially outward;

11 said resilient member having a position wherein said opening is
12 smaller than said stud to releasably engage said outer surface of said stud [for
13 releasable engagement], and said resilient member having an expanded
14 position wherein said opening is sized to permit passage of said stud.

1 23. (Once Amended) An enclosure latching system for providing
2 releasable engagement between a door and an enclosure, said latching system
3 comprising:

4 a stud extending outwardly from one of said door and said enclosure
5 along an axis, said stud having an outer surface oriented at an angle to said
6 axis; and

7 a resilient member positioned adjacent a surface of the other one of
8 said door and said enclosure, said resilient member having:

9 a substantially toroidal configuration,

10 an outer surface contacting said surface of said other one of said
11 door and said enclosure to prevent movement of said outer
12 surface of said resilient member radially outward, and

13 an inner surface moveable radially outward;

14 said torroidal configuration of said resilient member defining an
15 opening smaller than said stud, and [said opening of said resilient member
16 being configured to] being expandable radially outward to permit passage of
17 said stud, said resilient member being configured to releasably engage said
18 surface of said stud [for releasable engagement of said stud], thereby
19 providing releasable engagement between said door and said enclosure.

Claims 24 and 25 are newly added.